



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,601	11/21/2003	Olli-Pekka Pohjola	088245-2354	8207
23524 7590 06/18/2008 FOLEY & LARDNER LLP 150 EAST GILMAN STREET P.O. BOX 1497 MADISON, WI 53701-1497			EXAMINER PHAN, HANH	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 06/18/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/717,601

## Applicant(s)

POHJOLA ET AL.

## Examiner

Hanh Phan

## Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 21-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Office Action is responsive to the RCE filed on 04/03/2008.
2. The indicated allowability of claims 1-14 and 21-29 is withdrawn in view of the newly discovered reference(s) to Horn (US Patent No. 6,925,263) and Kogelnik et al (US Patent No. 6,684,031). Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29 recites the limitation "**the at least two disturbing reflection means**" in line 7. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 26 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Chae et al (Pub. No.: US 2005/0078958).

Regarding claims 26 and 29, referring to Figure 1, Chae et al teaches a point-to-multipoint data transmission network, comprising:

at least one hub (i.e., an optical line terminal (not shown), Fig. 1, page 3, paragraphs [0038]-[0040]);

at least one transmission medium (i.e., a transmission medium 22, Fig. 1);

at least one station (i.e., optical network units 12, Fig. 1) connected to the hub via the at least one transmission medium (i.e., Fig. 1, page 3, paragraphs [0038]-[0040]);

transmission means (i.e., transmitter 14, Fig. 1) for transmitting an upstream signal from a first station (i.e., Fig. 1, page 3, paragraphs [0038]-[0040]);

reflection means (i.e., fiber Bragg grating 24, Fig. 1) for producing a disturbing reflection; and

combination means (i.e., fiber Bragg grating 24, Fig. 1) for combining the disturbing reflection with a second reflection of the upstream signal to render the second reflection undecodable by a second station (i.e., Fig. 1, page 3, paragraphs [0038]-[0040], and page 4, paragraph [0055]).

7. Claims 26 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Smets (Pub. No.: US 2004/0013360).

Regarding claims 26 and 29, referring to Figure 2, Smets teaches a point-to-multipoint data transmission network, comprising:

at least one hub (i.e., an optical terminal line OLT, Fig. 2);

at least one transmission medium (i.e., a transmission medium 4, Fig. 2);

at least one station (i.e., optical network units 20, Fig. 2) connected to the hub via the at least one transmission medium (i.e., Fig. 2, page 2, paragraphs [0029]-[0030] and page 3, paragraphs [0031]-[0033]);

transmission means (i.e., transmitter 46, Figs. 2 and 3) for transmitting an upstream signal from a first station (i.e., Figs. 2 and 3, page 4, paragraphs [0047]-[0053] and [0057]);

reflection means (i.e., a high reflective mirror 13 or a fiber reflect Bragg grating, Fig. 2) for producing a disturbing reflection; and

combination means (i.e., high reflective mirror 13 or a fiber reflect Bragg grating, Fig. 2) for combining the disturbing reflection with a second reflection of the upstream signal to render the second reflection undecodable by a second station (i.e., Fig. 2, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066]).

8. Claims 26 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Kogelnik et al (US Patent No. 6,684,031).

Regarding claims 26 and 29, referring to Figure 4, Kogelnik et al teaches a point-to-multipoint data transmission network, comprising:

at least one hub (i.e., Central Office 20, Fig. 4);

at least one transmission medium (i.e., a transmission medium 18, Fig. 4);

at least one station (i.e., optical network units 10, Fig. 4) connected to the hub via the at least one transmission medium (i.e., Fig. 4, col. 4, lines 38-54);

transmission means (i.e., transmitter 110, Figs. 4 and 5) for transmitting an upstream signal from a first station (i.e., Figs. 4 and 5, col. 4, lines 38-54 and col. 5, lines 12-58);

reflection means (i.e., a fiber reflect Bragg grating 55, Fig. 4) for producing a disturbing reflection; and

combination means (i.e., a fiber reflect Bragg grating 55, Fig. 4) for combining the disturbing reflection with a second reflection of the upstream signal to render the second reflection undecodable by a second station (i.e., Fig. 4, col. 4, lines 38-58).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-14, 21-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chae et al (Pub. No.: US 2005/0078958) in view of Horne (US Patent No. 6,925,263).

Regarding claims 1, 8, 21, 27 and 28, Chae et al teaches all the aspects of the claimed invention as set forth in the rejection to claims 26 and 29 above except he fails to specifically teach reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection. Horne, from the same field of endeavor likewise teaches a point to multipoint data transmission network (Figures 1, 4 and 5). Horne further teaches reflecting the upstream signal by at least two disturbing reflectors (i.e., reflective element 402 and reflective element 404, Fig. 4) to produce a disturbing reflection (i.e., Figs. 1, 4 and 5, col. 9, lines 62-67, col. 10, lines 1-67, col. 11, lines 1-67, col. 12, lines 1-12 and col. 13, lines 35-47). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection as taught by Horne in the system of Chae et al. One of ordinary skill in the art would have been motivated to do this since allowing improving the security in avoiding redirecting of someone's data to various network units and the possibility of eavesdropping to another's signal because of the redirecting of the optical signals to various optical network units.

Regarding claims 2, 9 and 22, the combination of Chae et al and Horne teaches wherein in the combining of the disturbing reflection, the second reflection comprises an unwanted reflection (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066]).

Regarding claims 3, 10 and 23, the combination of Chae et al and Horne teaches wherein the transmitting step comprises using a transmission medium that comprises

an optical fiber (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066]).

Regarding claims 4 and 11, the combination of Chae et al and Horne teaches the data transmission network comprises an Ethernet passive optical network and the first station comprises an optical network unit (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066] and Figs. 1, 4 and 5 of Horne).

Regarding claims 5 and 12, the combination of Chae et al and Horne teaches the at least one disturbing reflector comprises at least one discrete reflector (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066] and Figs. 1, 4 and 5 of Horne).

Regarding claims 6, 13 and 24, the combination of Chae et al and Horne teaches the at least one disturbing reflector comprises a long continuous reflector (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066] and Figs. 1, 4 and 5 of Horne).

Regarding claims 7, 14 and 25, the combination of Chae et al and Horne teaches the at least one disturbing reflector is located in a redundant branch of an optical splitter (i.e., Fig. 1 of Chae et al, page 3, paragraphs [0038]-[0040], page 4, paragraph [0055] and page 5, paragraph [0066] and Figs. 1, 4 and 5 of Horne).



11. Claims 1-14, 21-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smets (Pub. No.: US 2004/0013360) in view of Horne (US Patent No. 6,925,263).

Regarding claims 1, 8, 21, 27 and 28, Smets teaches all the aspects of the claimed invention as set forth in the rejection to claims 26 and 29 above except he fails to specifically teach reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection. Horne, from the same field of endeavor likewise teaches a point to multipoint data transmission network (Figures 1, 4 and 5). Horne further teaches reflecting the upstream signal by at least two disturbing reflectors (i.e., reflective element 402 and reflective element 404, Fig. 4) to produce a disturbing reflection (i.e., Figs. 1, 4 and 5, col. 9, lines 62-67, col. 10, lines 1-67, col. 11, lines 1-67, col. 12, lines 1-12 and col. 13, lines 35-47). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection as taught by Horne in the system of Smets. One of ordinary skill in the art would have been motivated to do this since allowing improving the security in avoiding redirecting of someone's data to various network units and the possibility of eavesdropping to another's signal because of the redirecting of the optical signals to various optical network units.

Regarding claims 2, 9 and 22, the combination of Smets and Horne teaches wherein in the combining of the disturbing reflection, the second reflection comprises an

unwanted reflection (i.e., Fig. 2 of Smets, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066]).

Regarding claims 3, 10 and 23, the combination of Smets and Horne teaches wherein the transmitting step comprises using a transmission medium that comprises an optical fiber (i.e., Fig. 2, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066]).

Regarding claims 4 and 11, the combination of Smets and Horne teaches the data transmission network comprises an Ethernet passive optical network and the first station comprises an optical network unit (i.e., Fig. 2 of Smets, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066], and Figs. 1, 4 and 5 of Horne).

Regarding claims 5 and 12, the combination of Smets and Horne teaches the at least one disturbing reflector comprises at least one discrete reflector (i.e., Fig. 2 of Smets, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066], and Figs. 1, 4 and 5 of Horne).

Regarding claims 6, 13 and 24, the combination of Smets and Horne teaches the at least one disturbing reflector comprises a long continuous reflector (i.e., Fig. 2 of Smets, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066], and Figs. 1, 4 and 5 of Horne).

Regarding claims 7, 14 and 25, the combination of Smets and Horne teaches the at least one disturbing reflector is located in a redundant branch of an optical splitter

(i.e., Fig. 2, page 2, paragraphs [0029]-[0030], page 3, paragraphs [0031]-[0033], page 4, paragraph [0057] and page 5, paragraph [0066], and Figs. 1, 4 and 5 of Horne).

12. Claims 1-14, 21-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kogelnik et al (US Patent No. 6,684,031) in view of Horne (US Patent No. 6,925,263).

Regarding claims 1, 8, 21, 27 and 28, Kogelnik et al teaches all the aspects of the claimed invention as set forth in the rejection to claims 26 and 29 above except he fails to specifically teach reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection. Horne, from the same field of endeavor likewise teaches a point to multipoint data transmission network (Figures 1, 4 and 5). Horne further teaches reflecting the upstream signal by at least two disturbing reflectors (i.e., reflective element 402 and reflective element 404, Fig. 4) to produce a disturbing reflection (i.e., Figs. 1, 4 and 5, col. 9, lines 62-67, col. 10, lines 1-67, col. 11, lines 1-67, col. 12, lines 1-12 and col. 13, lines 35-47). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the reflecting the upstream signal by at least two disturbing reflectors to produce a disturbing reflection as taught by Horne in the system of Kogelnik et al. One of ordinary skill in the art would have been motivated to do this since allowing improving the security in avoiding redirecting of someone's data to various network units and the possibility of eavesdropping to another's signal because of the redirecting of the optical signals to various optical network units.

Regarding claims 2, 9 and 22, the combination of Kogelnik et al and Horne teaches wherein in the combining of the disturbing reflection, the second reflection comprises an unwanted reflection (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58).

Regarding claims 3, 10 and 23, the combination of Kogelnik et al and Horne teaches wherein the transmitting step comprises using a transmission medium that comprises an optical fiber (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58).

Regarding claims 4 and 11, the combination of Kogelnik et al and Horne teaches the data transmission network comprises an Ethernet passive optical network and the first station comprises an optical network unit (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58, and Figs. 1, 4 and 5 of Horne).

Regarding claims 5 and 12, the combination of Kogelnik et al and Horne teaches the at least one disturbing reflector comprises at least one discrete reflector (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58, and Figs. 1, 4 and 5 of Horne).

Regarding claims 6, 13 and 24, the combination of Kogelnik et al and Horne teaches the at least one disturbing reflector comprises a long continuous reflector (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58, and Figs. 1, 4 and 5 of Horne).

Regarding claims 7, 14 and 25, the combination of Kogelnik et al and Horne teaches the at least one disturbing reflector is located in a redundant branch of an optical splitter (i.e., Fig. 4 of Kogelnik et al, col. 4, lines 38-58, and Figs. 1, 4 and 5 of Horne).

***Response to Arguments***

13. Applicant's arguments with respect to claims 1-14 and 21-29 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

/Hanh Phan/

Primary Examiner, Art Unit 2613

